Dry Tortugas

National Park Service
U.S. Department of the Interior

Dry Tortugas National Park
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Key West, FL 33041

Preserving Fort Jefferson

Preserving Fort Jefferson provides a unique challenge to National Park Service employees and contractors. The remote marine environment, the logistical difficulties, and the size of the fort conspire to make restoring the fort seem daunting. However, highly skilled contractors are now hard at work to insure that Fort Jefferson will be preserved for future generations.

Protection and Problems

Fort Jefferson was intended to hold 450 cannons and 1,500 men. The latest technologies were incorporated into its design to protect the soldiers here. Specialized iron shutters used to protect the cannon openings were one of the many technological advances used here. These hinged, wrought-iron shutters were placed between the mortar core of the fort and the brick façade. A great achievement for their day, they were first introduced into American forts in 1857. These shutters were known as "Totten shutters," after the coastal fort designer, General Joseph Totten.

During use, the shutters were unlocked from the bronze strike plate below. Upon firing the cannon, gases escaping from the muzzle the moment before the egress of the shot would momentarily throw the shutters open. The shutters were carefully balanced so that they would swing freely and 'rebound' into the closed position.

Unfortunately, the very metal that provided valuable protection to soldiers under fire proved devastating to the fort itself. In a salt-water environment, the wraught-iron quickly began to rust and expand. As the iron rusted, it pushed the brick apart, causing serious structural damage to Fort Jefferson's walls. A walk around the moat shows where large sections of the fort walls have collapsed into the moat. This is largely caused by the rusting shutter system.

The founding legislation of Dry Tortugas National Park mandates the National Park Service to "protect, stabilize, restore, and interpret Fort Jefferson, an outstanding example of nineteenth century masonry fortification" for future generations. Without undertaking serious action to stop further degradation, it became obvious to National Park Service personnel that the walls of Fort Jefferson were in serious trouble.

Original Bronze Strike Plate

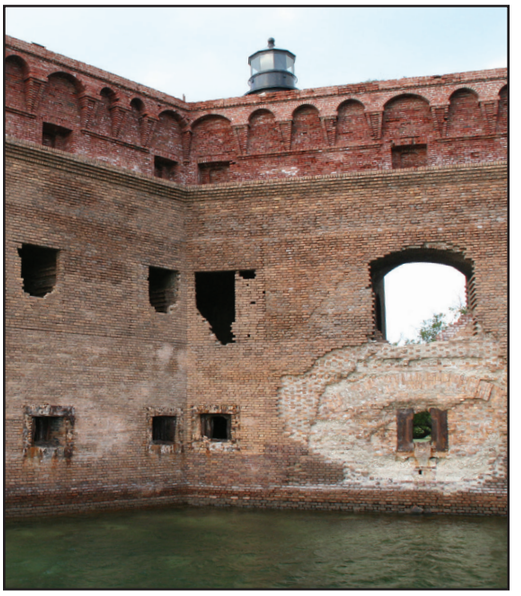
Preservation Solutions

Dry Tortugas National Park has initiated a multi-phased, multi-year preservation project to stabilize Fort Jefferson. The scope of this project is to carefully remove the existing brick surrounding the embrasure (cannon) openings on the lower level in order to gain access to the original iron elements. When possible,original bricks will be cleaned and set aside for reuse.

Next, crews will remove all of the rusted iron elements from the original Totten shutters and stabilize the exterior walls of Fort Jefferson by rebuilding the scarp (fort) wall. Concrete made of local sand and coral - just as used in the original construction - historic bricks salvaged during demolition and new replacement bricks are being used to preserve the historic appearance of the walls. In addition, the parapet and upper tier embrasure openings will be stabilized through selective brick replacements and re-pointing of the mortar joints.

The last step is to restore the Totten shutters "in kind" per the Secretary of the Interior's Standards for the Treatment of Historic Properties. A good example of the "finished product" can be seen on a walk about halfway around the moat, where the wall has been restored and the replica Totten shutters have been installed.

The current phase of the project is concentrated on stabilizing seven embrasures located on Front 3 and has a target completion date of July, 2014. In 2013, a contract for this work was awarded to Stone and Lime Imports, of Brookfield, MA. The demolition and stabilization work you are witnessing today is being carried out by skilled masons from Stone and Lime Imports, Inc.



Pre-Treatment

Post-Treatment

Working and Living at Fort Jefferson

Housed within the walls of Fort Jefferson, the masonry crew of ten to twelve workers per shift more than doubles the current population of full-time NPS employee residents. Masons are on site three weeks and then are off island for a week. While not on the island, contractors will most likely return to their families and friends at home in the Northeast.

Masons are working full days from early in the morning until the evening. One added amenity that Stone and Lime Inc. has budgeted into their time here is a chef. The chef lives with the crew members and prepares three meals a day as well as snacks and refreshments. Additionally, the chef maintains the quarters in a clean and orderly way, so the masons can focus on their jobs and not have to spend their down time doing other work.
As you can imagine, the Dry Tortugas can be a challenging place to work, so just like everyone else the preservationists like to relax when the day is over by snorkeling, fishing, kayaking, reading, or even watching TV.

Masonry crew member tooling the joints

Contact Information

For further information about this project or other on-going preservation work at Fort Jefferson and the rest of Dry Tortugas National Park please contact:

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